

Preliminary Amendment  
Divisional of U.S. Application  
No. 10/105270

**AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

**LISTING OF CLAIMS:**

1. (currently amended): Highly durable silica glass comprising 0.01% to 2% by weight, based on the weight of the silica glass, of at least one element selected from the group consisting of magnesium, calcium, strontium, barium, yttrium, hafnium and zirconium. A silica glass member for use in a plasma reaction apparatus using a halogen-containing compound gas and a plasma thereof, which is composed of a highly durable plasma-resistant silica glass consisting essentially of 0.01% to 2% by weight, based on the weight of the silica glass, of at least one element selected from the group consisting of magnesium, calcium, strontium, barium, yttrium, hafnium and zirconium.
2. (currently amended): Highly durable silica glassThe silica glass member according to claim 1, wherein the content of said at least one element is in the range of 0.05% to 0.5% by weight based on the weight of the silica glass.
3. (currently amended): The silica glass member Highly durable silica glass according to claim 1, wherein said element is zirconium and the silica glass is transparent.
4. (currently amended): The silica glass member Highly durable silica glass according to claim 1, wherein said element is zirconium and the silica glass exhibits a variant coefficient of zirconium concentration as measured on plural micro-regions by an EPMA (X-ray micro

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analyzer) in the range of 0.1% to 100%; said variant coefficient being defined by the following equation:

$$\text{Variant coefficient (\%)} = \sigma / C \times 100$$

wherein  $\sigma$  is standard deviation and C is concentration of zirconium.

5. (currently amended): A silica glass member according to claim 1, which is a flange of a reaction tube, for use in an apparatus using a halogen-containing compound gas and a plasma thereof; said member being made of highly durable silica glass as claimed in claim 1.

6. (currently amended): A semiconductor-producing apparatus equipped with a silica glass member as claimed in claim 5 The silica glass member according to claim 1, which is a bell jar.

7. (currently amended): A liquid crystal-producing apparatus equipped with a silica glass member as claimed in claim 5 A semiconductor-producing apparatus equipped with a silica glass member as claimed in claim 1.

8. (currently amended): A process for producing a highly durable silica glass ingot comprising simultaneously falling a finely divided silica powder and a finely divided zirconium-containing substance in a furnace using oxyhydrogen flame as heat source to form an accumulated layer of zirconium-containing silica on a bottom of the furnace, and extending the accumulated layer to outwardly radial directions, to form an ingot wherein zirconium is uniformly dispersed in a silica glass matrix. The semiconductor-producing apparatus according to claim 7, wherein said silica glass member is a flange of a reaction tube.

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9. (currently amended): ~~The process for producing a highly durable silica glass ingot according to claim 8, wherein the finely divided silica powder and the finely divided zirconium-containing substance are fallen as a finely divided silica powder having deposited thereon a finely divided zirconium containing substance.~~ The semiconductor-producing apparatus according to claim 7, wherein said silica glass member is a bell jar.

10. (currently amended): ~~The process for producing a highly durable silica glass ingot according to claim 8, wherein the finely divided silica powder and the finely divided zirconium-containing substance are fallen as a mixture of the silica powder and the zirconium-containing substance powder.~~ A liquid crystal-producing apparatus equipped with a silica glass member as claimed in claim 1.

11. (currently amended): ~~The process for producing a highly durable silica glass ingot according to claim 8, wherein the finely divided silica powder and the finely divided zirconium-containing substance are separately fallen.~~ The liquid crystal-producing apparatus according to claim 10, wherein said silica glass member is a flange of a reaction tube.

12. (currently amended): ~~The process for producing highly durable silica glass according to claim 8, wherein the finely divided silica powder and the finely divided zirconium-containing substance are fallen in a manner such that the silica powder and the zirconium-containing substance are contacted with the oxyhydrogen flame as heat source to form an accumulated layer of zirconium containing silica, and the accumulated zirconium containing silica layer is maintained at a temperature sufficiently high for keeping a molten state to be~~

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~~thereby extended outwardly in radial directions.~~ The liquid crystal-producing apparatus according to claim 10, wherein said silica glass member is a bell jar.

Claims 13 to 34 (cancelled).